



Fire Marshal's Notice

June 2016

The Texas State Fire Marshal's Office offers this interpretation and guidance concerning clearance between storage and ceilings in unsprinklered buildings.

The State Fire Marshal's Office has as its current adoption the 2012 editions of NFPA 1, *Fire Code*, and NFPA 101, *Life Safety Code*, by rule (28 TAC §34.303). Questions concerning the proper interpretation of clearance of storage from the ceiling have prompted this interpretation.

The language of NFPA 1-2012, Section 10.19.3.1 is clear:

“Storage shall be maintained 2 ft. or more from the ceiling in nonsprinklered areas of buildings.”

There is a note in the NFPA 1-2012 Handbook for this section, which reads:

“The 2 ft. clearance requirements for nonsprinklered buildings permits fire department hose streams to reach the ceiling. The 2 ft. clearance requirement does not apply to storage against walls.”

This note from the Handbook does NOT appear as an “Appendix A” explanatory note, and generally, appendices and notes are not mandatory parts of the Code unless specifically adopted. Ignoring the note makes the inspector's job infinitely easier without improving fire and life safety, but may create problems for the tenant being inspected.

For instance, a food service operation might keep a day's worth of products stacked along and against a wall, running floor to ceiling, and use the stock within a day, only to replace that stored product tomorrow with a new set of stock – so long as this did not block the exit egress path, this would seem acceptable.

Here is the rationale for our interpretation and the method by which our inspectors will interpret Section 10.12.3.1:

1. The clearance above stored materials in unsprinklered space gives firefighting crews a way to distribute water above and over stored materials in an attempt to cool the hottest part of the room of the fire incident. Cascading water down into materials that are burning allows the crew to reach materials farther from the suppression team than they can advance; consequently, an opening of 2 ft. above the stored materials makes sense.
2. A wall behind material (materials against a wall) is a two-edged sword that offers both a reflective surface (although poor) that can not only re-radiate the heat of the fire back into the combustible materials but also creates a surface against which water can cascade down behind the burning materials and cool that surface and the material burning.
3. To some extent, then, it is desirable to have material against a wall, and so the note acknowledges this. The fire code acknowledges the concept of the shelving against a wall being treated as the wall in reference to sprinklered facilities, both in NFPA 1-2012, 10.19.3.2 (which includes an appendix note) and the references to NFPA 13-2013, 8.6.6.



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4. For sprinklered facilities, the task is much more straightforward and NFPA 13 precludes pendant sprinklers from being too close to the wall to effectively produce a stream, whether that wall is a flat surface or created by storage of materials.
5. When inspector "judgement" calls are made (i.e., not prescriptively described in the code), too often a way will be found to make the allowance for "storage against a wall" into a more dangerous arrangement: for instance, taking racks intended for industrial storage use and shortening them to 7 or 8 ft. in height while preserving the 4 ft. (or greater) depth of the shelf and creating a greater than "Ordinary" fire load "against the wall."
5. Alternatively, the "stored materials stacked against the wall" could contain large voids where the materials closest to the front of the stack are stacked to the ceiling but materials behind are not stacked as high, creating voids that are inaccessible to fire streams within the pile.
6. Inspections need to have a degree of consistency in the manner by which inspections are handled to remove uncertainty from the life safety requirements for storage in unsprinklered buildings and to assure space for firefighting operations.
7. The only way to accomplish this is to limit storage to no higher than 24 in. below the ceiling at any point in the room except at the wall.

The State Fire Marshal interprets NFPA 1, 2012 edition, Section 10.19.3.1 as follows:

For material stacked against the wall in a nonsprinklered building, the first stored item or packaging in contact with the wall is allowed to be stacked to the ceiling. With subsequent stacks of material that are "in front of" (i.e., separated from the wall by the first stack of materials) the first stack may not extend beyond 24 in. below the ceiling.

This practice addresses and prevents the problem of the front stacking of materials hiding a void behind the front as well as the potentially infinite depth of a shelf. It also allows for a simple, clear safety message that can be delivered in a straightforward fashion and does not require special evaluation of every stack of storage.

Bookshelves against a wall may extend to the ceiling in unsprinklered space. Items stacked in front of these shelves and bookcases not against a wall must provide a 24 in. clearance from the ceiling.

This also addresses shelving and bookshelves against a wall and the materials in them, as they are treated as part of the shelf and, by extension, as the wall.

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